MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2018/2019

MMA1033 – VISUAL PROGRAMMING
(All Sections / Groups)

22 OCTOBER 2018
9.00 am – 11.00 am
(2 Hours)

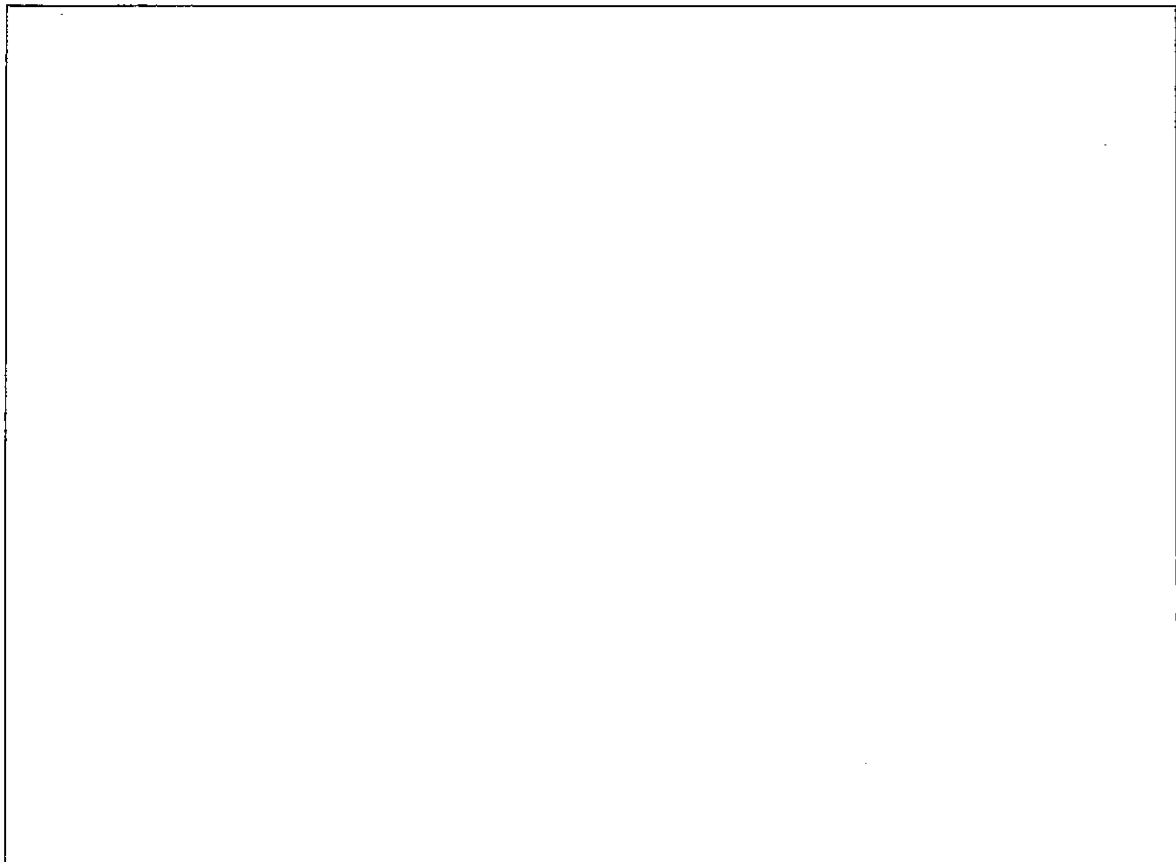
INSTRUCTIONS TO STUDENTS

1. This question paper consists of 13 pages (including the front page).

2. Answer **ALL** questions.

3. Write all your answers in the answer box associated with each question.

4. Write your **SEAT NUMBER** on the question paper top right hand corner on this page.

QUESTION 1

(a) Based on the processing codes below, draw a shape as you will expect on the *Display Windows*.

```
size(400,400);
beginShape();
    vertex(50,150);
    vertex(150,50);
    vertex(150,100);
    vertex(300,100);
    vertex(350,150);
    vertex(300,200);
    vertex(150,200);
    vertex(150,250);
    vertex(50,150);
endShape(CLOSE);
```
[3 marks]

Continued...

(b)Explain this code and each values in the function size(), rect(), fill(), line(), and background(), ellipse().

      i)   size(400,500);

      ii)   rect(55,65,15,25);

      iii)   fill (255, 0, 0, 255);

      iv)   line(10,80,50,20);

      v)   background(125,0);

      vi)   ellipse(10,20,30,40);

      vii)   triangle(30, 75, 58, 20, 86, 75);

[7 marks]

i)

ii)
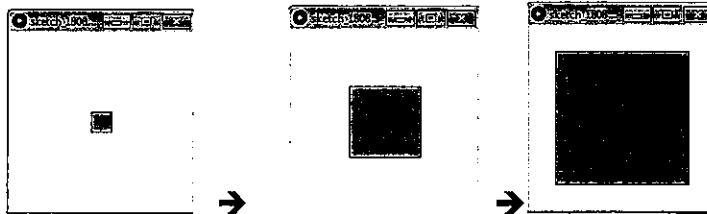
iii)

iv)

v)

vi)

vii)

Continued...

QUESTION 2

(a) What is the values of x, y and z from this declaration of variables and initialization and partially run the program?

```
int x=10;
int y;
y = x + 10;
int z =
z=x+y*3;
```
[3 marks]

x=

y=

z=

(b) Complete your codes using Processing to make the circle increasing in size.
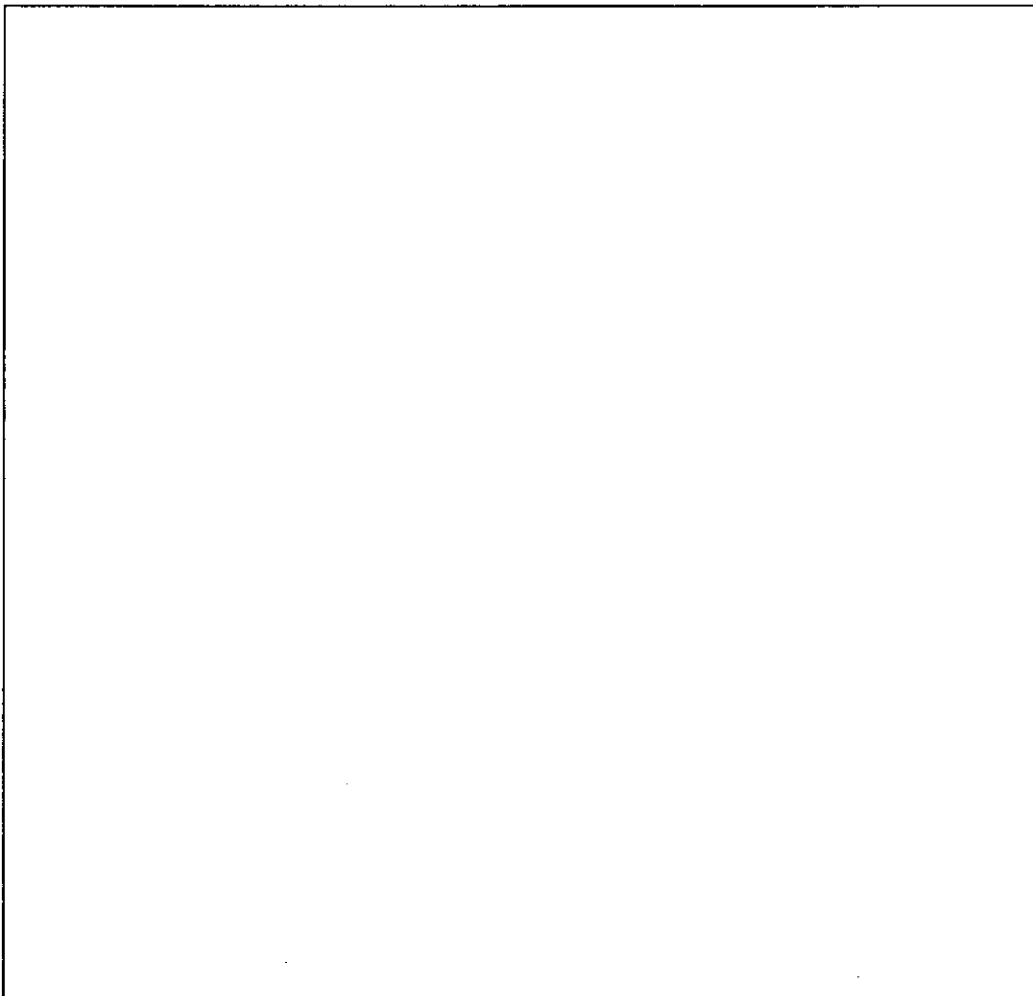
[3 marks]


```
int circleSize=0;
int circleX=100;
int circleY=100;

void setup() {
  size(200,200);
}

void draw() {
background(255);
  stroke(0);
  fill(175);
  ellipse(_____,_____,_____,_____);
_____;
}
```

Continued...

(c) Based on the processing codes below, draw the shape as you will expect on the *Display Windows*.
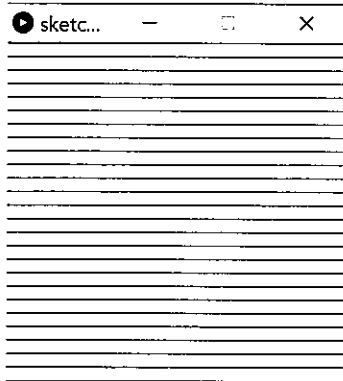
[4 marks]

```
size(200,400);
int x=30;
int y=50;
int z=30;

rect(x,y,z,200);
y=y+100;
rect(x+z,y,z,200);
y=y-120;
rect(x+z*2,y,z,200);
y=y+100;
rect(x+z*3,y,z,200);
```

Continued...

QUESTION 3
(a) Fill in the blanks in the code to create the following screenshots.

[3 marks]

```
size(500,500);
background(255);

int y=0;
        while(y<_____) {

        stroke(0);

        line(_____,_____,_____,_____);

        y=____+ 20;

}
```

(b) Write the output of this function.

```
int grade = 80;
while (grade>75) {
println ("A+");
grade -=1;
}
```

[2 marks]

Continued...

(c) What is an array?   [1 mark]

(d) Write the declaration statements for the following arrays.

10 integers	
1000 floating points	

[2 marks]

(e) Rewrite the below processing code using constraint function.

```
if (r>255) {
r=255;
} else if (r<0) {
  r=0;
}
```
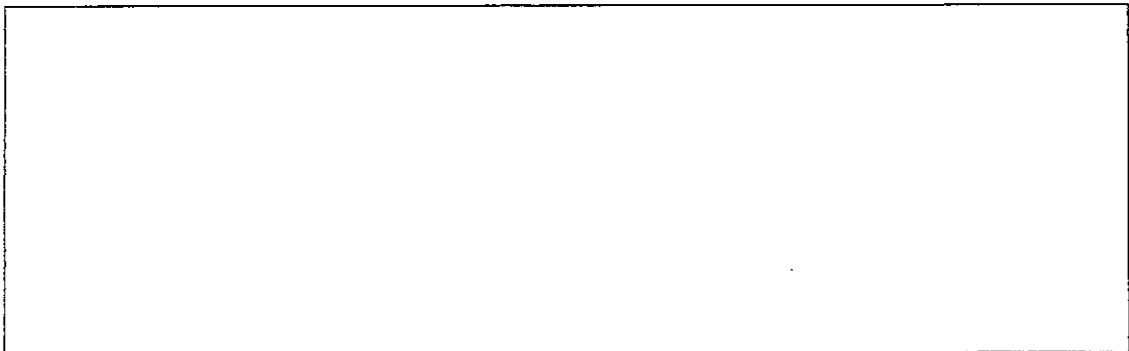
[2 marks]

QUESTION 4

(a) Based on the processing codes below, draw a shape as you will expect on the *Display Windows*.

```
float x= 20;

void setup(){
size(100,100);
}
void draw(){
 background(204);
 if(x<20){
   ellipse(50,50,60,60);
 }else{
   rect(20,20,60,60);
 }
 line(x+30,0,x+30,100);

}
```

[4 marks]

Continued...

(b) Are the following Boolean expression **true** or **false**? Assume variables int a=5, b=3 and c=2;

[2 marks]

i)   !(a>=5)= _____

ii)   (b==3||c<2&&a>5)=_____

iii)   (c<2||b==3&&a>5)=_____

iv)   (a>5 && b==3||c<2)= _____

(c) Examine the following code samples and write down your answer what will appear in the message window.   [4 marks]

i)

```
int myScore = 80;
if(myScore>80) {
  println("Very Good");
} else if (myScore >50) {
  println("Good");
} else {
  println("Not Good");
}
```

OUTPUT:_____

Continued...

ii)

```
int myScore = 50;
if(myScore>80) {
  println("Very Good");
} else if (myScore >=50) {
  println("Good");
} else {
  println("Not Good");
}
```

OUTPUT:_____

iii)

```
int myScore=90;

if(myScore>=90){
ellipse(50,50,30,30);
} else {
  Rect(50,50,30,30);
}
```

OUTPUT:_____

iv)

```
int myScore=90;

if(myScore<=90){
ellipse(50,50,30,30);
} else {
  Rect(50,50,30,30);
}
```

OUTPUT:_____

Continued...

QUESTION 5

(a) What is the function in Processing?　　　　　　　　　　　　　　　　[1 mark]

(b) Why the function is used in Processing?　　　　　　　　　　　　　　[2 marks]

(c) Predict the output of the following program by writing out what would appear in the *message window*.　　　　　　　　　　　　　　　　　　　　　[6 marks]
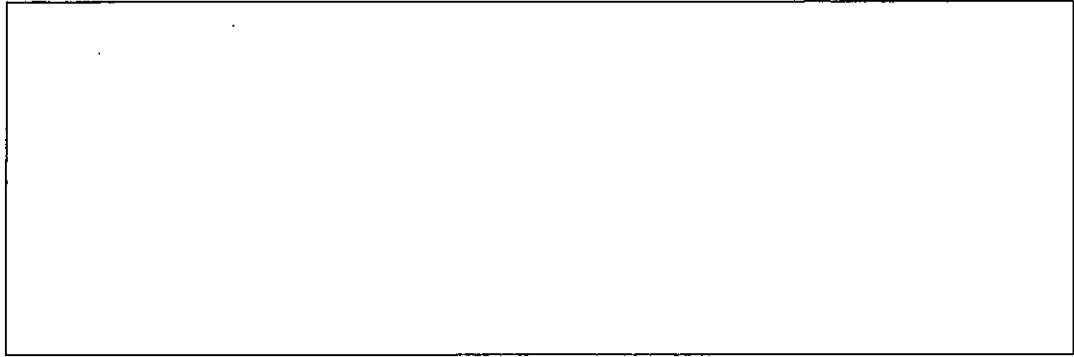
(i)

```
void draw() {
  println("Ayah");
  function2();
  noLoop();
}

void function1() {
  println("Bayi");
  function1();
  println("Datuk");
}

void function2() {
  println("Cucu");

}
```
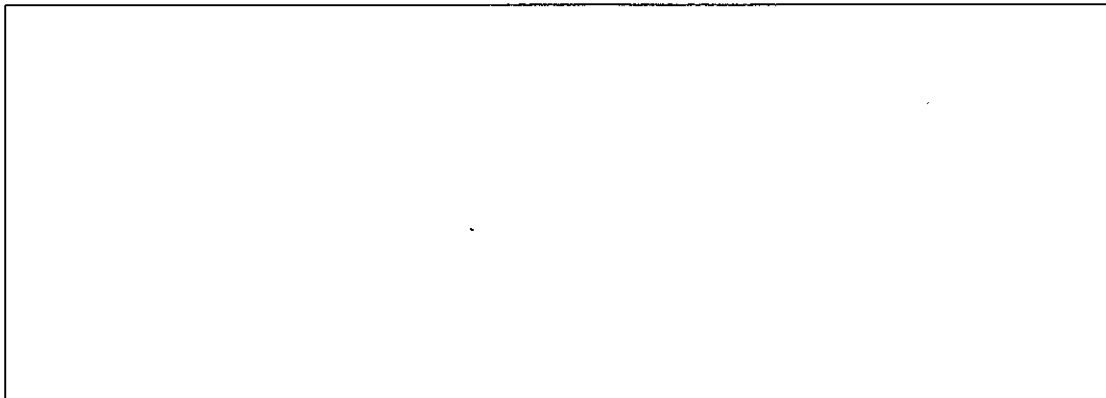
[2 marks]

Continued...

```




```

(ii)

```
void draw() {
  println("Ayah");
  function2();
  noLoop();
}

void function1() {
  println("Bayi");
}

void function2() {
  println("Cucu");
   function1();
  println("Datuk");
}
```

[2 marks]

```




```

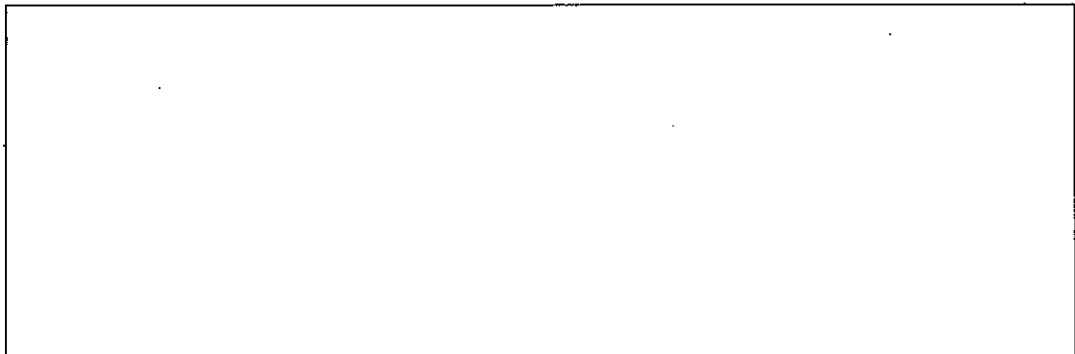**Continued...**

(iii)

```
void draw() {
  function2();
  function1();
  noLoop();
}

void function1() {
  println("Bayi");
  function2();
  println("Datuk");

}

void function2() {
  println("Cucu");
}
```

End of Page.